

Exhibit 22

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 To: [-] google_bod@google.com.
 Cc: [-]
 Bcc: [-]
 Subject: 2008 Google Product Strategy - internal memo.

I've shared a document with you called "Eric 2008 Memo v2":
http://docs.google.com/a/google.com/Doc?id=adq8j6b6hq_22ddtz5b&invite=w8wjsh

It's not an attachment -- it's stored online at Google Docs. To open this document, just click the link above.

Dear Board Members,

As part of our board meeting next week we will be reviewing the 2008 product and business strategy of Google. Our process this time focused on "what is new" and "what is different this year." Enclosed is the internal memo we assembled outlining some of the new items and I thought you all might be interested in the details. We will discuss more formally next week. Comments are appreciated and you should be able to edit this document as well if you really want to change our strategy !

In the meantime this is being presented to all the engineering teams and product teams at Google tomorrow morning.

Thanks Eric

GOOGLE PROPRIETARY

Fewer products, and all products to be great, is our Strategy – Final Version

Eric Schmidt

October 2007

GOOGLE PROPRIETARY

(Adapted from Sergey's email with comments from Jeff, Jonathan, Larry, Hal Varian, Sundar, Megan)

This is organized as Search, Ads, Apps and Infrastructure, followed by a section on Rules and Questions. We observe a few things today about Google:

- * We want a smaller number of great products for a worldwide audience.
- * We are building point products and interesting but limited solutions. We need scalable architecture and good taste in user interfaces, along with standards for user interactions and build them into widely adopted development tools.
- * We have confusion about priorities and goals inside engineering and the product groups.
- * We need to evaluate teams and particularly engineering leadership around crisp principles and outcomes.

Here are some of the new ideas and areas for emphasis in 2008 for Google:

SEARCH

The overall goal of search is to allow everyone to find the information that is useful to them. This is why our search group works so well, but the goal is more nuanced. Naturally this means ranking web pages as well as possible. It also means creating new ways to search, creating tools that create great information, digitizing and making the information available ourselves. We need another new way to harness the help of our users and communities to improve search now that personalized search is doing well.

Creating better content: Often the search problem is really a content creation problem; the right incentives and structure were not in place to create the content in the first place. Our goal should be that 5-10% of people who use search also create meaningful content (beyond just ranking information.) Forums are a good example where expert discussion occurs. Google could develop something like Notebook or a Groups/Community product where an expert easily adds his or her knowledge. Allowing annotation on any page through the toolbar is another example. Both of these are examples of multi-authored documents. After 1 hour of searching, we would like people to at least publish their summaries of the information so others can benefit. What is the best way to encourage seamless user annotation and opinion from experts into our search index? Geo, local, and other structured data search needs to be part of our approach here.

The power of open standards at scale and the democratization of the tools to publish and annotate content will continue to drive information growth. The problem of commercial spam in an open framework will adversely impact search results for years to come. In addition to allowing annotation from experts at the global level, we need to find ways for individuals to leverage the growing social graph of the web and our progress with apps to rank results based on trusted relationships within their social networks. Today, our Search strategy and our Apps strategy are separate architectural and product trajectories. The Facebook model has the property that it allows users to control identity at scale and in effect create an extended whitelist. If implemented properly this approach has the potential to threaten not only our applications products, but could ultimately evolve to produce a better search experience. We need to understand why Wikipedia works well, but Slashdot comments tend to be noise. The issues here are at a delicate interface of technology, UI and social interaction.

ADS

Our goal is to maximize end user experience and revenue through ads and drive the virtuous cycle between publishers and advertisers. To achieve this goal we continue to drive our ads efforts wider, through new formats and media, and deeper, by continually improving our core text ads system.

We have been gradually expanding wider, moving from just google.com web search to AFS, AFC, site-targeted ads, and offline. It is important to remind ourselves why we pursue these wider areas: First, because we have such a large network of advertisers already, we believe we can more efficiently find the best advertisers for particular

inventory. Second, if our platform attracts new advertisers because of these other media, we will increase monetization in our more traditional areas. The newest areas for investment in ads are Display Ads (including the acquisition of Doubleclick), Rich Media (including the launch of Gadget Ads), TV Ads (based on the early success of Echostar) and Simple Ads. Simple Ads focus is on advertisers that currently find AdWords too complex. Our investments in Gadget Ads, GFA, DFA will enable us to compete effectively in Brand Advertising

We are also going deeper by improving our core text ads system through AdWords 3.0 and our continued investments in analytics and reporting, optimization tools such as conversion based billing and web site optimizer, user based ads quality and international forms of billing. AdWords 3.0 will be easier and more straightforward for users due to a new Campaign structure designed to eliminate the targeting and billing constraints faced today. The increased controls provided by these innovations will enable advertisers to achieve even better results.

The long term vision our clients want delivered is a platform where they can spend their money in an efficient manner. We need to execute on this vision starting with online advertising both search and display but eventually extending to across offline media as well. This is a big effort and a massive change in how advertising, in fact all of marketing, works. Ultimately we need a model which allows advertisers to input their end goals (trial, purchase, sign up) and how much they are willing to pay to achieve those goals. Our systems must be able to learn about advertiser product by analyzing their website and product line so we can then apply real science and engineering algorithms, to determine which media channels, targeted to what users, in what amount should be utilized to achieve the goal. We should become the definitive source to compute and output usable, unified metrics on how well the specific advertiser goals are achieved.

Google remains a partner focused company. Google's success in the US and Europe depends heavily on the providers of complementary services: ISPs, content providers, intellectual property right owners, mobile phone providers, ad agencies, SEMs, payment processors, and shipping services. We need a clear business strategy for dealing with these industries on whom we depend so much. How do we work effectively with these partners? They are providing high-touch services that we cannot easily provide, yet we do not always have productive interactions with these groups. We also have had difficulties with intellectual property rights owners. All need to be resolved collaboratively.

In some environments (particularly in developing nations) the infrastructure needed to reproduce our US/European business model is not present. We need to be flexible about how we adapt to such environments and do what it takes, including direct investment, to nurture these areas.

APPLICATIONS

Enterprise Apps: The enterprise messaging and productivity market (including MS Office and Exchange) is very large - comparable even to our core advertising business. We are finding ourselves well situated to address this exciting and worthwhile opportunity. From our Dogfood experience, we know that converting consumer applications to support business use cases isn't a small matter - there's much work to do. We've had some great early success on this front. But to seriously pursue this \$10B+ market, we'll need to significantly increase our resource commitment. We don't intend to confront Microsoft head on, but rather to focus on scenarios that web-based applications enable: communication and productivity among distributed teams who need to get work done quickly.

Consumer Apps: We only want to build the applications that are most important and dramatically transform them. We

start with Email (Gmail) because so much time is spent on email. In fact, it was the only Internet activity greater than search when we started (it still is). Because we started with the email problem, we felt we could make it much more efficient and effective, especially for high volume users.

Geolocation: We need Earth, Maps, Local search all perfectly tuned for best available results on any device. To do this we need much better imagery, navigation and applications that use these services.

Consumer Content: We believe that if more content could get published easily, this would improve the web and improve our business. More content = more search utility. More content = more ad inventory. We see a greater goal here that could be worthy. To build a web platform that is broadly adopted for managing online information much like Windows has done for the desktop (though not in a monopolistic way). This means systems for storage, sharing, annotation, etc.

We have a good start with Mail, Calendar, Reader, and Docs & Spreadsheets -- centered around sharing, real-time collaboration, and our cloud-based computing model. The consumer content message is about authoring (i.e. easily posting information into the cloud), finding it (search and community) and being social (learning what your friends are doing.) These are the essential elements of the Facebook phenomenon and we can learn from that. Google Search was able to exploit the web graph (via PageRank) to make search more relevant; in the relationships between people, there is a social graph that will be exploited to make user experience (including search and communications) more relevant. Why should users have to go to an application to create their social graph? Their social graph is being created for them by their interactions with our services already. The social graph also opens up important new distribution channels.

Specialized communities: Orkut and Youtube each have their own specialized plans and needs and we need to invest heavily in both given traffic and popularity. Both need to use our common infrastructure as much as possible and also express functionality into other parts of Google (e.g. iGoogle.)

New platforms for Consumers: Mobile and Chrome

There are two parts to our mobile strategy. The first is to drive adoption of our services on every phone which passes the test of daily engagement. (This means we will optimize our development efforts around high-end phones and not go for broad reach on feature phones as data shows we get very little usage here). Our strategy here pivots around 1) making search a great and fast experience 2) driving adoption of our services like Google mobile maps and mobile gmail and 3) winning in Japan and taking the key lessons to the rest of the world. Our Gadgets extensibility model needs a mobile component. The key challenge in mobile devices is user interface and user interaction; we need new solutions to these problems.

The second strategy is to change the nature of the entire industry with Android. Through deep partnerships with carriers, ODMs, and developers we hope to enable an open ecosystem for the mobile world and create a standard, open software platform for Java-based mobile software. It is important to recognize that this is a major platform change; this type of strategy will take patience and many years of investment before it pays dividends. What Gmail did for AJAX, iPhone has done for webkit. Webkit is the new minimum bar. We will drive adoption of mobile web via Android.

Chrome and Gears together enable the next generation browsing experience for Web applications on Windows, Mac

and Linux. We believe in high end browsers. Chrome is a better way to run Web applications and its adoption is also good for our economic structure.

It's important for Google that every user have a Google presence on their desktop or mobile device. The Toolbar, Desktop Search, Pack and other newer services need to better and more easily enable users - no matter where they are - to reach more Google services.

INFRASTRUCTURE (Including Development platforms and common services and UI)

Google Computer Infrastructure: Our goal is to build the largest, most scalable, and fastest set of servers and services that enable the new web based applications, services and monetization described above. This needs to work with most applications, most computers and browsers, and on other mobile devices even when temporarily off-line. We need scalable infrastructure for file systems, authentication, management of friends lists and address books, service invocation. We've found, for example, that people share more photos, documents, and calendar events via Gmail than via Picasa, Docs, and Calendar. Wouldn't it be great if they all just worked together?

Building \$1 Billion computer: Since we are spending that amount, we need to really engineer this. Our easiest win in scalability is in the connectivity (I/O between memory, cpu chips, etc.) In the case of a large set of cpus and memories the cross connect problem is primary and we need to build the hardware (think about 1 million pins on a CPU instead of 1000 as an exercise).

Exporting the Google compute cloud: We have not discovered yet how to combine developer and infrastructure approach for cloud computing. (In fact, we are not doing it at all.) Needs to be easier for people inside Google to be able to do things than anywhere else; then productize it. Isolation is an example: we built a kernel that allows us to isolate the disk drive, e.g., but we have not deployed it. This affects overall productivity and the future market.

IT shops are unlikely to move all their operations to our data center. But they will move some of their applications . Our strategy is to start with mail, calendar, collaboration, video and search. Over time we will continue to provide IT shops with the option of cloud based applications, effectively moving them from their data center to ours. Apps efforts are in effect a strategy to move the world to our data centers.

Building blocks for Web applications: The building blocks for all apps in the cloud need to be designed: designed for mobility, common uploading, listviews, key commands, generalized way to handle all the objects. We need a simply UI to handle these objects and navigate through the files/photos, etc. Common way of setting preferences e.g. along with a standard way to store the objects. Need a standard way to do tree/structured traversal way for web services.

We should build a set of libraries that cover most of the things that a developer needs similar to the "Inside Mac" books in intent. Review the books the Mac has and try to write the same books for the Web .. its almost incoherent today.

Basic user interface and applications design: All applications need to have a set of standard methods, etc. that use this infrastructure (e.g. chooser element where you could view and choose over a set of 1 billion objects.) Each application is rediscovering basic architecture and the current systems do not scale well enough.

Social platforms: Today we have social apps, but no social development program. Social Light and MakaMaka become our entry point across iGoogle, Orkut, Gmail, and most importantly, even 3rd party containers. SocialLight allows us to have 'social app portability' - across different containers with different social graphs. This is different from the walled garden approach of Facebook - and it is different than a strategy which depends solely on having everyone in the world log into Google via GAIA.

iGoogle: our platform strategy has produced 100 different stock names display gadgets. Why don't we just have one good one? We need many more ways to exploit the power of the cloud in an iGoogle container. All gadgets should have access to a set of standard Google components for logged in users. By encouraging lots of developers to make gadgets, we get the benefit of a competition and exploration of a variety of approaches. However, we should definitely come up with a way for users to rate/review/score the different gadgets. This would be a good test case for the "user annotation and opinion" tool mentioned at the beginning. The social and UI aspects are at least as important as the technology.

Authenticated end users

Most of our strategies work much better when the end user is logged in. While we don't want to eliminate anonymous searching, we should do everything we can to encourage logged in Google use. Those authenticated end users will use our services more, we can trust them more for end user notification about inappropriate content, etc. Virtually all user generated content services require authentication for proper and legal management of the service.

Authentication connects users with their social graphs. And connecting users with their social graphs is critical for those users to benefit from the annotations and expert opinions within their trusted social network; for users to communicate more seamlessly with their social network across applications. And authentication is a much easier way for users to build and connect with their social graphs than going to a special application like Facebook. This is the strategic nature of authentication, and we should find attractive ways for people to log into Google. Build a plan for federated and syndicated authentication (this is an explicit acknowledgment that GAIA isn't the answer to every problem and that there will always exist different and trusted credential issuers that need to work together).

What in order, are the products and services that encourage people to stay logged into Google?

ICS: We have made good progress on our internal systems, but need to elevate their importance to that of our consumer and ad products. We recently launched a new sales automation system to help our very bright sales people spend less time on menial tasks with yellow sticky notes and brittle spreadsheets, and more on actually selling. COS, our old order management system, needs a next generation overhaul to match our tremendous business growth, so it can work seamlessly across agencies, large and small customers, and our ever growing set of offerings. We need better systems for ad approvals, answering customer emails and phone calls and coordinated all aspects of. To improve visibility, we need to invest in better dashboards that track intra-quarter revenue by pods and accounts, and integrate this information into our financial systems. We also need to improve our own internal tools

for communication with each other such as video conferencing

GOALS AND RULES

International

40 Languages in 60 days.. Almost everyone benefits from Google, not just English speakers. Within the limits of legality and taste, encourage local engineering groups to adapt Google services to local custom, language and trends.

International is also about engineering products close to our users worldwide. We should accelerate the transfer of larger, more meaningful engineering projects to international engineering sites so that those sites build products in their countries for their markets and for the world. We should do this according to the new Technology Focus Area structure.

Hiring

We need computer scientists and not specialists. Most of the above is really general purpose computing and is really about scale, size and large data and networks. Our Product Management needs to reflect this: most PM activity on designing scalable systems and less on products and product features as there is a tendency to locally optimize instead of working for a generic solution.

Our products and tools serve a globally diverse audience, so it's a strategic advantage that our teams not only encompass the world's best talent but also reflect the rich diversity of our customers, users and publishers. It is imperative that we hire people with disparate perspectives and ideas and from a broad range of cultures and backgrounds. This philosophy won't just ensure our access to the most gifted employees; it will also lead to better products and create more fun and interesting teams. There are talented people from all walks of life who meet and exceed our hiring bar; we don't need to lower our hiring standards, we instead have to work harder to find them.

Existing rules still need to be followed:

- * 70/20/10
- * Projects should not span more than 2 offices
- * Only hire international PM's outside US
- * Features, not products
- * Use AJAX as a client strategy
- * Must do Windows and Mac
- * Use the common installer

- * Use Borg
- * Don't build your own index:
- * For storage use Big Table/GFS
- * One data storage service for end user data
- * Use online web monitoring tools available on Moma
- * Increase your machine utilization
- * Keep the PDB up to date
- * Design for Power Users
- * Design for mobile
- * Dogfood all of our products // iGoogle gadgets for all user-facing apps

QUESTIONS

What are our non-goals? Low volume specialized web applications that other companies can build.

What is the handling of Google Health, Finance, Real Estate? Are they search, community, etc.?

New strategy and goals for Checkout?

How do we ensure that engineering is really working against these goals? How do we make sure the teams are deployed against the highest priority activities (i.e. iGoogle needs more engineers).